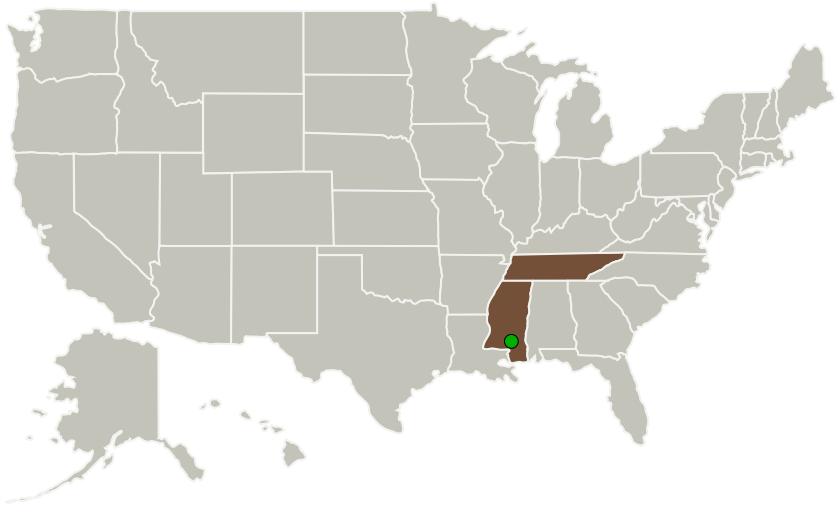
Active Radiation Shield, Phase I

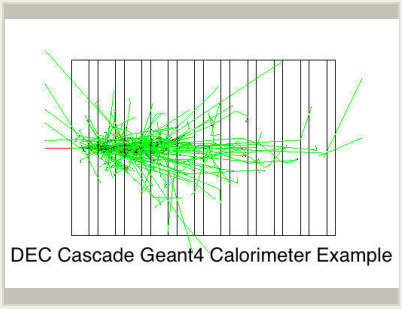
Completed Technology Project (2016 - 2017)

Project Introduction

DEC-Shield technology offers the means to generate electric power from cosmic radiation sources and fuse dissimilar systems and functionality into a structural component to create a Multi-functional Structure (MFS). DEC-Shield integrated into MFS technology can be used to generate electric power and provide radiation protection in a space vehicle; even maximizing that protection by spreading the required systems and components across the structure. GTL will develop several DEC-Shield concept designs, fabricate test articles and test them in a representative radiation environment to demonstrate proof of concept. Further, GTL will analyze the test results and develop an optimized proof of concept DEC-Shield design. The Phase II effort will culminate with the design, fabrication and testing of DEC-Shield prototype Demonstration Panel that incorporates electrical power generation from GCR and solar wind sources.

Primary U.S. Work Locations and Key Partners





Active Radiation Shield, Phase I

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Gloyer-Taylor Laboratories LLC

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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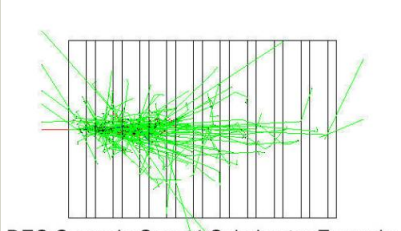
Organizations Performing Work	Role	Type	Location
Gloyer-Taylor Laboratories LLC	Lead Organization	Industry	Tullahoma, Tennessee
Stennis Space Center(SSC)	Supporting Organization	NASA Center	Stennis Space Center, Mississippi
The University of Tennessee-Knoxville(UT-K)	Supporting Organization	Academia	Knoxville, Tennessee

Primary U.S. Work Locations	
Mississippi	Tennessee

Images



Briefing Chart Image
Active Radiation Shield, Phase I
(https://techport.nasa.gov/image/128176)

Project Management

Program Director:
Jason L Kessler

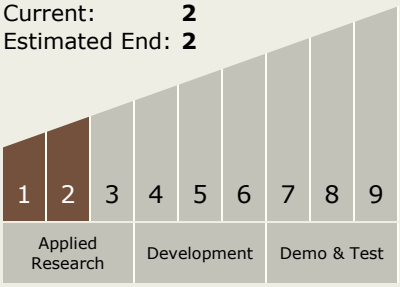
Program Manager:
Carlos Torrez

Principal Investigator:
Paul Gloyer

Co-Investigator:
Paul Gloyer

Technology Maturity (TRL)

Start: **1**
Current: **2**
Estimated End: **2**



Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
  - TX03.1 Power Generation and Energy Conversion
    - TX03.1.4 Dynamic Energy Conversion